

TELEASTRO

SETTING AND CONTROL OF STREET LIGHTING

USER'S MANUAL



AFEISA

AFEI Sistemas y Automatización, S.A.

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DESCRIPTION OF THE UNIT

The TELEASTRO is a control and setting system for street lighting using the latest technologies, such as Internet, GPRS communication and SMS Messaging, to provide an easy to install solution and above all flexible and efficient performance.

CONTROLS

- Astronomic calculation by high-accuracy algorithm based on geographical coordinates in degrees and minutes.
- Automatic time setting through Internet, based on an atomic clock of reference.
- Four outlets for setting the installation with astronomical and/or time programming.
- Multiple programming choices for creating personalised calendars.
- Automatic calculation of Easter Sunday for programming movable days.
- Configuration and automatic turning on by the GPRS modem.
- Keyboard and display for test, programming and setting.

LOCAL CONTROL

- Basic programming by keyboard or automatic through the TELEASTRO.NET System.
- Viewing the status of the switchboard and alarms, through the display and the status leds.
- Automatic activation of the normal programming when a remote programming operation has finished.

REMOTE CONTROL BY SMS MESSAGING

- Reception of priority alarms.
- Remote control and remote programming of settings.
- Consultation of the status of the switchboard and the alarms, apart from monitoring and controlling them.

CONTROLLING THE INSTALLATION THROUGH THE TELEASTRO.NET SYSTEM

- Complete programming of settings and alarm orders.
- Monitoring of protections and alarms of the lighting up switchboard with control of the restart differentials.
- Supervising functioning of any flow regulator or savings system.
- Alarms and recordings of the electrical parameters in three-phase networks with and without neutral.
- Automatic creation of status reports of the installations.
- Supervision of installations by clients, zones or districts.

TECHNICAL CHARACTERISTICS


- Setting circuits outlets / Type.....	4 / Relay
Contact circuit C1, C3 and C4.....	NC
Contact circuit C2 commutation.....	NC (connector 24 and 25)
Maximum commutation voltage.....	277 VAC, 30 VDC
Maximum commutation current.....	10A (VAC), 5A (VDC)
Maximum commutation power.....	1660 VA, 150 W
Insulation between open contacts.....	750 VAC
- Digital alarm inputs CA.....	7 (Optoinsulated)
Frequency.....	500ms
Type of detection.....	Opening / Closing potential-free contact
- Beat counter inputs CA.....	2 (Optoinsulated)
Frequency beat counter inputs.....	5ms per beat (100Hz)
- Analogical inputs MA.....	3 (VL1-VL3) + 4 (MA0-MA3)
Resolution inputs	10 bits
- Maximum voltage applicable (VLn - N).....	240 VAC
- Maximum voltage applicable (MA _n -Com -).....	±VDC, 2 VAC
- Internal Protection.....	by PTC
- External Protection.....	Omnipole cut device (230 VAC / 2 A)
- Terminals.....	230 VAC
- Communications ports.....	RS232 + RS485 (Optoinsulated)
Transmission speed.....	1200 to 38400 bauds
- Clock.....	Accuracy ± 3s/year (25°C)
Updating TIME-SERVER (by GPRS).....	YES
- Battery.....	3V 220mAh Lithium long play

(*) At the analogical inputs, toroidal transformers model "TRAFO-20" will be connected to measure current (xA / 1.5 VAC), being fitted internally with an electric protection system against over-intensity.

- Display.....	type reflective LCD
- Leds.....	7 cylindrical indication leds
- Keyboard.....	6 silicone keys
- Weight.....	700g
- Box.....	8 pitch DIN rail
Box measurements.....	140 x 118 x 71 mm
Panelled IP protection.....	31
Non-panelled IP protection.....	30
- Frontal measurements.....	140 x 45mm
- Consumption at 230V~ (*).....	7VA
- Working voltage.....	230VAC +/- 15%
- Working frequency.....	50 – 60Hz
- Working temperature.....	-20 to 75°C
- Storage temperature.....	-40 to 125°C
- Air humidity (without condensation).....	95%
- Microprocessor.....	H8 of 32 bits
- Type of the programations.....	8 settings by circuit
Programming special days.....	200 days
Weekly programming.....	YES
Programming by ranks of dates.....	50 ranks
Programming in relation to Easter Sunday.....	YES
- Programming SMS.....	4 settings by circuit
- Dates of time change.....	50 años
- Register eventos / Register medidas (capacity).....	4 Kbytes


(*) With inputs and outputs activates, display, RS232 and RS485.

SAFETY WARNINGS

WARNING: The symbol  indicates that there is a risk to the user, so the manual shall be consulted for information on the part indicated.

Any use of the unit in a manner other than that specified by the manufacturer could compromise the safety of the unit and affect the protection of the user.

Handling or installation of the unit must be performed with the unit disconnected from the power supply.

 **WARNING:** Connector 18 (NEUTRAL) and connector 14 (COM-) are internally connected in the unit. They may be at dangerous potentials for the user. You must **NEVER** connect a referenced unit to earth between any analogical input MAX and COM (-).

STORAGE AND MAINTENANCE

It is recommended that the equipment is stored in the respective packing boxes and bearing in mind several minimum climactic conditions such as those in the technical characteristics.

Installation does not require prior building work to be carried out. All that is needed is to ensure the appropriate drill hole or assemble the appropriate DIN rail in the distribution board where it will be located. Also, the wiring terminals will not be accessible.

In the place where the unit is to be installed, the minimum space allocated to ventilation and to the connection of the wires of the unit terminals must be observed.

This unit does not have a fuse, so connection of a protection fuse and anti-parasite filter at the supply socket is shall be installed.

Leads with maximum section of 2.5mm is recommended for wiring to the unit terminals.

It is recommended to use leads with maximum section of 2.5mm and minimum of 1.5mm for wiring to the unit connectors (Flexible leads type H07V-K are recommended).

All that is needed to clean the front casing is a damp (not wet) cloth with water and neutral soap, not with an abrasive cleaner.

Parts to be examined by the technical service:

- Activation of relays and contactors for setting by manual drive.
- Good condition of the leads, of the riveted terminals and connectors, location of points where abnormal arcs or over-heating have occurred and proper tightening of connectors.
- Adequate size of the setting elements and normal running of the unit.

INITIAL TURNING ON

The following is a description of the steps required to turn on the unit for the first time with connection to the TELEASTRO.NET system (by GPRS network) or without connection.

Turning on with connection to the TELEASTRO.NET System

- A.- Before installing the unit in its final location, fill in and send the Application Form for Registration with the TELEASTRO.NET System, following the instructions in it.
- B.- Check that the intensity transformers are correctly installed (see submenu **«Reading Electrical Parameters»** in the «TEST Menu» chapter).
- C.- Check the behaviour of the manual/automatic switch (if on changing the switch to manual, the «hand» symbol appears on the display, it indicates that the switch is properly installed).
- D.- Enter the preselection of the active energy counter (see page 40).
- E.- Connect the unit to the TELEASTRO.NET System (see page 11).
- F.- Once the system has transmitted registration, it will programme it automatically. The user will be informed by an SMS message once the unit is operative.

Turning on without connection to the TELEASTRO.NET System








- A.- Select the unit language (it is Spanish by default).
- B.- Enter the geographical coordinates of the corresponding location.
- C.- Check that the intensity transformers are correctly installed (see submenu **«Reading Electrical Parameters»** in the «TEST Menu» chapter).
- D.- Check the behaviour of the manual/automatic switch, as indicated in step C of the previous paragraph.
- E.- Enter the preselection of the active energy counter.
- F.- Programme the turnings on and/or off of the setting circuits that we desire.
- G.- Check the time and the date.

KEYS AND SYMBOL FUNCTIONING

KEYS

- Key «OK» allows access to the menus, submenus and confirming data.
- Key ▲ or ▼ allows increasing or decreasing values, changing options and accessing the different screens of the display.
- The key ← enables exiting from the screen or cancelling.
- Key ◀ or ▶ allows selecting the value to be modified and accessing the different screens.

SYMBOLS

-  : Indicates that we are in the submenu to view or to modify the time and date of the unit or that we are carrying out time type setting programming.
-  : Indicates that we are in daytime (between sunrise and sunset) or programming a setting in relation to sunrise.
-  : Indicates that we are at night (between sunset and sunrise) or programming a setting in relation to sunset.
-  : Indicates that we are in the submenu to view or to modify the geographic coordinates.
-  : Indicates the type of programming that is programmed in the unit, as well as indicating the circuit that contains some programming within the type of programming (Weekly, special, etc...).
-  : Indicates that the unit is in Manual mode.
-  : Indicates that there are active alarms in the unit.

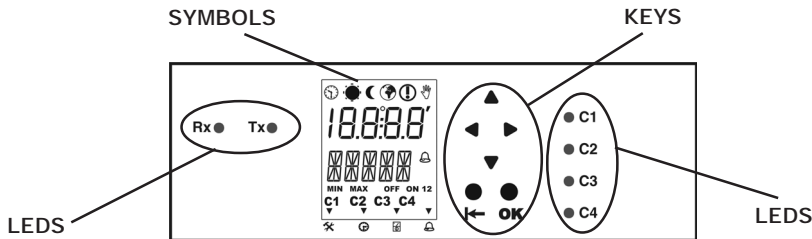
MIN : Indicates that there is an alarm for minimum setting.

MAX : Indicates that there is an alarm for maximum setting.

- OFF** : Indicates that the setting circuit is disconnected or the next setting circuit turning off time is disconnected or that the turning off setting is being programmed.
- ON** : Indicates that the setting circuit is connected or the next setting circuit turning on time is disconnected or that the turning off setting is being programmed.
- 1** : Indicates that the next sunrise or sunset that is being viewed on screen is for the day in hand and also indicates if the next setting is for the day in hand.
- 2** : Indicates that the next sunrise or sunset that is being viewed on screen is for tomorrow and also indicates if the next setting is for tomorrow.
- ▼** : Indicates the menu that we are in.
- C1, C2, C3 y C4**: Indicates that the corresponding setting circuit is programmed.
- r** : Indicates that the alarm has occurred during savings hours.
- m** : Indicates that the alarm has occurred during full power hours.

LEDS

- **C1, C2, C3 and C4**: Indicates the status of the setting circuit (led on=contact closed).
- **Rx / Tx**: Indicate reception and transmission of data through the communications series port.



WAIT MODE SCREEN

On the «**Wait mode screen**» screen you will see:

- The current time and date of the unit.
- The setting circuits that are activated (C1 to C4).

On the «**Wait mode screen**» screen, if we press key ▲ or ▼ , it shows us the next Sunrise or Sunset after the current time.

On the «**Sunrise**» y «**Sunset**» screens you will see:

- The time corresponding to the Sunrise or Sunset.
- Symbol 1 if it is Sunrise or Sunset of the current day or symbol 2 if it is Sunrise or Sunset of tomorrow.

On the «**Wait mode screen**» screen, if we press key ◀ or ▶ , it shows us the screen of the next setting of each circuit that is programmed. Pressing keys ▲ or ▼ the setting circuit is changed.

This screen will show:

- The symbol C1, C2, C3 or C4.
- The symbol ON or OFF and the time of the next circuit setting viewed on screen (maximum current day and next).
- If the circuit is not programmed, «**no PROG**» will be seen on screen.
- If the circuit is programmed but there is no setting for the current day and the next, «**no MAN**» will be seen on screen.

NOTE

- *We exit from this screen by pressing the key ⬅ or in 15 seconds if no key is pressed.*

SETUP MENU

The «**EELE SETUP**» menu allows configuring and programming specific parameters of the unit: programme coordinates, time change, lock keyboard, etc.



Pressing the «**OK**» key, we access the main menu. Select the «**EELE SETUP**» menu with key **▲** or **▼** and confirm with the «**OK**» key again.

The «**EELE SETUP**» menu consists of a series of submenus, which we will describe below.

TELEASTRO.NET SYSTEM

The «**TELEASTRO.NET System**» submenu allows connecting or disconnecting the unit to the TELEASTRO.NET System, set the mode of operation of the communications network (depending on the telephone operator GPRS) and force a GPRS mode of operation NAT.



TELEASTRO.NET System Configuration:

1.- Press the «**OK**» key to access menus.

Enter the access password if it is required (see «**Password**» chapter).

2.- Select the «**TELE SETUP**» menu with the key ▲ or ▼ and press the «**OK**» key.

3.- With key ▲ or ▼ choose the submenu and press the «**OK**» key.

4.- Through the key ▲ or ▼ shows cyclically the screen to connect to the computer System

Teleastro.net «**SEt NET**» and set the mode of operation of the communications network GPRS «**SEt NAT**».

5.- Press again the «**OK**» key if you wish to modify the indication of the choice that is displayed on the screen at that time.

The «**Y**» or «**N**» indication of the corresponding option will flash.

6.- Modify the indication of the option with the key ▲ or ▼.

7.- Confirm with the «**OK**» key or press key ← to cancel and to exit from the submenu.

NOTES

- You need to have a GPRS modem connected and an access to the GPRS network.
- When the unit has established the connection to the TELEASTRO.NET System (whether after a reset or by reconnection to the System) «**NEt ACTIV**» will come up on screen for a moment.
- The screen to force a GPRS connection mode NAT «**Cnct SERVr**» will be displayed only if the mode of operation of the network is configured as NAT «**SEt NAT Y**».
- If your equipment is already connected to the System Teleastro.net «**SEt NET Y**» and we want to disconnect; will be asked a password to access, otherwise not.

COORDINATES

The submenu «**Coordinates**» allows programming the data relating to geographic location of the place (geographic coordinates and GMT). By manufacturing default, the ones configured are those of Barcelona (Spain).



Programming coordinates:

- 1.- Press «**OK**» key for access to menus.

Enter the access password if required (see «**Password**» chapter).

- 2.- Select «**EELE SETUP**» menu with key ▲ or ▼ and press the «**OK**» key.
- 3.- With key ▲ or ▼ choose the submenu «**SET LA-LO**» and press the «**OK**» key.

First of all, the latitude screen is shown.

- 4.- With key ▲ or ▼, the Latitude, Longitude and GMT screen is shown cyclically.
- 5.- Press the «**OK**» key again if you wish to modify any value of the screen that is being shown at that moment.

The values of the degrees will flash first on the Latitude or Longitude screens.

- 6.- With keys ◀ or ▶ select the value to be modified, which will flash on screen.
- 7.- With keys ▲ or ▼ respectively increase or reduce the value that is flashing.
- 8.- Confirm with the «**OK**» key («**SET OK**» will appear for an instant) or press the key ⬅ to cancel.
- 9.- Repeat steps 4 to 8 to modify values of other screens.
- 10.- Use the key ⬅ to exit from the submenu.

NOTE

- GMT will increase or decrease 15 minutes whenever key ▲ or ▼ is pressed.

TIME-SERVER

The submenu «Time-Server» allows automatically activating or deactivating the updating of the clock through an Internet time server.



Time-Server Configuration:

1.- Press the «OK» key to access the menus.

Enter the access password if it is required (see «Password» chapter).

2.- Select the «**EEEE SETUP**» menu with key ▲ or ▼ and press the «OK» key.

3.- With the key ▲ or ▼ choose the submenu «**SEE TMS**».

If the option «**SEE TMS Y**» is displayed on the screen, clock updating is activated or the «**SEE TMS N**» option if it is not activated.

4.- Press the «OK» key if you wish to modify the option.

The indication «Y» or «N» of the corresponding option will flash.

5.- Modify the indication of the option with key ▲ or ▼.

6.- Confirm with the key «OK» («**SEE OK**» will be displayed for a moment) or press the key ⬅ to cancel.

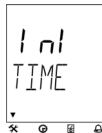
7.- Use the key ⬅ to exit from the submenu.

NOTES

- This submenu will be displayed on screen if the unit is connected to the TELEASTRO.NET System (see «**TELEASTRO.NET System**» submenu in this same chapter).
- If the «Time-Server» is activated, the unit will automatically update the time every 7 days.

FORCE TIME-SERVER

The submenu «**Force Time-Server**» allows automatically forcing the clock updating through an Internet time server.



Force Time-Server updating:

1.- Press the «**OK**» key to access the menus.

Enter the access password if it is required (see «**Password**» chapter).

2.- Select the «**TELE SETUP**» menu with key ▲ or ▼ and press the «**OK**» key.

3.- With the key ▲ or ▼ select the «**Inl TIME**» submenu.

4.- Confirm with the «**OK**» key to force updating the time.

Once the time has been updated, check it.

5.- Use the key ⬅ to exit from the submenu.

NOTES

- This submenu will be displayed on screen if the unit is connected to the TELEASTRO.NET System (see «**TELEASTRO.NET System**» submenu in this same chapter).
- If there is connection to the time server, «**OPEN TIME**», will be displayed on the screen, otherwise «**NO TIME**». As soon as updating is over, «**End TIME**» will come up on screen for a moment.

CLOCK

The menu «Clock» allows viewing and modifying the internal time and date of the unit.



Modification time and date:

- 1.- Press the «OK» key to access menus.

Enter the access password if required (see «Password» chapter).

- 2.- Select the menu «TELE SETUP» with key ▲ or ▼ and press the «OK» key.
- 3.- Select the menu «SET CLOCK» with key ▲ or ▼ and press the «OK» key.

Will appear on screen the current time and date of the unit, if press the ◀ or ▶ will appear other screen with the year and to the day of the week.

- 4.- Press the «OK» key again if you wish to modify any value.

The values of the hours will flash first.

- 5.- With keys ◀ or ▶ select the value to be modified, which will flash on screen.
- 6.- With keys ▲ or ▼ respectively increase or reduce the value that is flashing.
- 7.- Repeat steps 5 to 6 to modify values.
- 8.- Confirm with the «OK» key («SET OK» will appear for an instant) or press the key ⬅ to cancel.
- 9.- Use the key ⬅ to exit from the submenu.

NOTES

- This submenu will be displayed on screen if the unit is connected «Time-Server».
- The day of the week cannot be changed because it remains fixed automatically by the date.

TIME CHANGE

The submenu «Time change» allows activating or deactivating the Summer/Winter time change.



Time change configuration:

- 1.- Press the key «OK» to access menus.

Enter the access password if required (see «Password» chapter).

- 2.- Select «**EELE SETUP**» menu with key ▲ or ▼ and press the «OK» key.
- 3.- With key ▲ or ▼ choose the submenu «**SEE TCH**».

The option «**SEE TCH Y**» is shown on screen if the Summer/Winter time change is activated and the option «**SEE TCH N**» if the Summer/Winter time change is not activated.

- 4.- Press the «OK» key if you wish to modify the option. The indication «Y» or «N» will flash.
- 5.- Modify the option indication with key ▲ or ▼ and confirm with the «OK» key.

Configuration time change dates:

- 1.- Press the Key ◀ or ▶ in the submenú «**SEE CH**».
- 2.- With keys ▲ or ▼ select the year of the time change and press the «OK» key.
The day of the first time change will flash first.
- 3.- With keys ◀ or ▶ select in rotation the day of the first time change, the month of the first time change (screen «**d1 A1**»), the day of the second time change or the month of the second time change (screen «**d1A2**») to be modified, which will flash on screen.
- 4.- With keys ▲ or ▼ respectively increase or decrease the value that is flashing.
- 5.- Confirm with the «OK» key («**SEE OK**» will appear for an instant) or press the key ⬅ to cancel.
- 6.- Repeat steps 2 to 5 if you wish to modify more time change dates.
- 7.- Use the key ⬅ to exit from the submenu .

INTENSITY TRANSFORMERS

The submenu «Intensity Transformers» allows configuring the unit so that the analogical inputs MA1, MA2 and MA3 measure current by suitable transformers for reading the electrical parameters. If it is configured as NO, the inputs will measure continuous currents. By default it is configured for connecting Intensity Transformers.



Intensity transformer configuration:

- 1.- Press the «OK» key to access the menus.

Enter the access password if it is required (see «Password» chapter).

- 2.- Select the «**EELE SETUP**» menu with key ▲ or ▼ and press the «OK» key.
- 3.- With the key ▲ or ▼ select the submenu «**SET TRAF0**» and press the «OK» key.

The indication «Y» will flash on screen if the unit uses the analogical inputs for measuring current or the indication «N» if the analogical inputs are configured for measuring continuous currents.

- 4.- Modify the indication with the key ▲ or ▼ if you wish.
- 5.- Confirm with the «OK» key («**SET OK**» will appear for a moment) or press the key ⬅ to cancel.
If indication «Y» has been selected, another screen will come up, in which you should enter the scale factor (in Amps). The value of the scale factor will flash.
- 6.- With key ▲ or ▼ respectively increase or decrease the scale factor value. It will increase or decrease by 5 units every time the key ▲ or ▼ is pressed.
- 7.- Confirm with the «OK» key («**SET OK**» will appear for a moment) or press key ⬅ to cancel.
- 8.- Use key ⬅ to exit from the menu.

NOTE

- If it is configured as **YES** it will only read the input «MA0» as analogical input.

LANGUAGE

The submenu «**Language**» allows viewing and modifying the language of the unit menus. By manufacturing default, Spanish is configured.



Language configuration:

- 1.- Press the «**OK**» key to access menus.

Enter the access password if required (see «**Password**» chapter).

- 2.- Select the menu «**EELE SETUP**» with key ▲ or ▼ and press the «**OK**» key.
- 3.- With key ▲ or ▼ choose the submenu «**LANG**».

The option «**LANG SP**» will appear on screen if the current language is Spanish, the option «**LANG ENG**» if the language is English and the option «**LANG FR**» if the language is French.

- 4.- Press the «**OK**» key is you wish to modify the option.

The indication «**SP**», «**ENG**» or «**FR**» of the corresponding option will flash.

- 5.- Modify the indication of the option with key ▲ or ▼
- 6.- Confirm with the «**OK**» key («**SEE OK**» will appear for an instant) or press the key ⬅ to cancel.
- 7.- Use the key ⬅ to exit from the submenu.

NOTE

- If you press the key ⬅ on the «**Wait Mode Screen**» screen for more than 5 seconds, you will access this submenu directly.

LOCK KEYBOARD

The submenu «**Lock Keyboard**» enables you to lock or unlock access to the menu by the keyboard of the unit in order to protect it from misuse. By manufacturing default it is unlocked.



Keyboard configuration:

- 1.- Press the «**OK**» key to access menus.

Enter the access password if required (see «**Password**» chapter).

- 2.- Select the menu «**EELE SETUP**» with key ▲ or ▼ and press the «**OK**» key.

- 3.- With key ▲ or ▼ choose the submenu «**PAd**».

The option «**PAd UNLCK**» will be shown on screen if the unit is unlocked or the option «**PAd LOCK**» if it is locked.

- 4.- Press the «**OK**» key and ► simultaneously if you wish to modify the option.

The indication «**LOCK**» or «**UNLCK**» of the corresponding option will flash.

- 5.- Modify the option indication with key ▲ or ▼

- 6.- Confirm with the «**OK**» key («**SEE OK**» will appear for an instant) or press the key ◀ to cancel.

- 7.- Use the key ◀ to exit from the submenu.

NOTES

- If the keyboard is unlocked or the password is «0000» access to the menu by the keyboard of the unit.
- With the keyboard locked, no option will be able to be viewed or modified.

PROGRAMMING MENU



The menu «**Programming**» allows programming turning on and/or turning off the setting circuits on the basis of the type of calendar and programming options selected. This menu will only be displayed if the unit is not connected to the TELEASTRO.NET System, if you try to access it while connected to this system, «**no VALID**» will come up on screen for a moment.



By pressing the «**OK**» key, access the main menu. Select the menu «**TELE PROG**» with key **▲** or **▼** , and confirm with the «**OK**» key again.

DESCRIPTION SETTING CIRCUITS

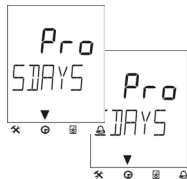
The menu «**PROG**» allows you to independently carry out the programming of turning on and/or turning off the setting circuits **C1**, **C2**, **C3** and **C4** which are described below:

- Setting circuit «**C1**» is the Astronomic circuit and is used for control of the main circuit of street lighting.
- Setting circuit «**C2**» is the one used for connection of the Energy Saving System that is used (regulator-stabiliser, ballast, half turn-off, etc) It can also function as a special setting circuit.
- Setting circuit «**C3**» and «**C4**» is referred to as Special, and tends to be used to connect another independent circuit (for example: fountains, monuments, advertising panels, lighting of buildings, etc.).

TYPES OF PROGRAMMING CALENDAR

In the programming menu there are different types of programming calendar for a setting circuit, as described below:

Pro MON	Weekly programming for every Monday.
Pro TUE	Weekly programming for every Tuesday.
Pro WEDN	Weekly programming for every Wednesday.
Pro THUR	Weekly programming for every Thursday.
Pro FRIID	Weekly programming for every Friday.
Pro SAT	Weekly programming for every Saturday.
Pro SUN	Weekly programming for every Sunday.
Pro ALL	Weekly programming, copies the programming entered for each of the days of the week.
Pro SDAYS	Special Day or of a day In Relation to Easter Sunday or a Rank of Dates for every year, programming.
Pro EDAYS	Special Day or of a day In Relation to Easter Sunday or a Rank of Dates for a specific year, programming.

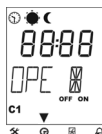





The priorities of the setting programmed for the current day vary according to the type of calendar that has been programmed. The order of priorities is:

- 1.- **Pro EDAYS**: a Special Day or In Relation to Easter Sunday with specified year.
- 2.- **Pro EDAYS**: a Rank of Dates with specified year.
- 3.- **Pro SDAYS**: a Special Day or In Relation to Easter Sunday for every year.
- 4.- **Pro SDAYS**: a Rank of Dates for every year.
- 5.- In the event of there not being any of the above programmes, it will execute the Weekly Programming corresponding to the day of the week of the day in hand.

SETTING CIRCUIT PROGRAMMING OPTIONS

In a setting circuit, the following programming options have to be programmed, as described below.



Number of setting	0PE n	We indicate the number of the setting to be programmed (maximum 8).
Programming type		Hour programming.
		Programming in relation to Sunrise.
		Programming in relation to Sunset.
	noPr	Not programmed.
Hour / Minute	HH:MM	Hour and minutes for the time programming.
	+/- MM	Minutes of difference for Programming in relation to Sunrise or to Sunset (Maximum +/- 240 minutes).
Setting	OFF	Setting circuit off.
	ON	Setting circuit on.

PROGRAMMING SETTING CIRCUIT

NOTE: The settings must be programmed in order of execution from 00:00 Hours.

How to programme the setting circuits is explained below in a simplified way. It is recommended for users who are already used to programming electronic units by keyboard; otherwise, follow the steps indicated in more detail in «**Step by step setting circuits programming**» (see page 25), which are explained later on.

1.- Press the «OK» key to access menus.

Enter the access password if required (see «**Password**» chapter).

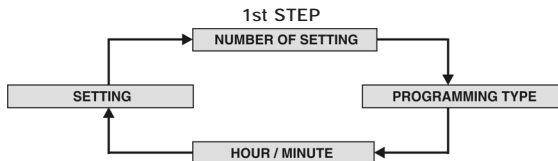
2.- Select the menu «**EELE PROG**» with key ▲ or ▼ and press the «OK» key.

3.- With key ▲ or ▼, choose the **Types of programming calendar** that you wish to carry out and press the «OK» key.

4.- With key ▲ or ▼, choose the Setting circuit to be programmed and press the «OK» key again.

5.- With keys ◀ or ▶, we move in a rotating menu to select the different **Programming options of the setting circuit** selected. The option that we have selected will appear intermittently.

We recommend following the order that we indicate below for new programming.



6.- Select the **Setting Number** to be programmed (OPE n, where n is the setting number) with key ▲ or ▼

- 7.- With key ◀ or ▶ , select the option **Programming Type** and choose the type with key ▲ or ▼.
- 8.- With key ◀ or ▶ , select the option **Hour / Minute** and programme the hour and minute in the case of Time Programming, or +/-minutes in the case of Programming in relation to Sunrise or Sunset and with key ▲ or ▼, respectively increase or decrease the values.
- 9.- Then with key ◀ or ▶ select the **Setting** and with key ▲ or ▼ choose OFF (circuit off) or ON (circuit on), and press the «OK» key.
- 10.- Confirm with the «OK» key («**SET DPE**» will appear for an instant).

In this way, the first setting for the circuit selected has now been programmed. To programme the next setting, follow the steps from point 5.

Once all the settings for the circuit selected have been programmed, we can go to point 4 to select another Setting Circuit or to point 3 to select another **Type of programming calendar**.

- 11.- Use the key ⬅ repeatedly to return to the «**Wait mode Screen**».
Before returning to the «**Wait mode Screen**», it will ask if you wish to record the programming that «**SET PRG**» has carried out.
- 12.- With key ▲ or ▼ select indication «**Y**» if you wish to record the programming or indication «**N**» if you do not wish to record it; it will flash on screen and you press the «OK» key.

NOTE

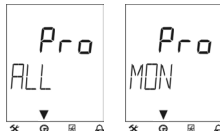
*If for 60 seconds no key at all is pressed in the «**Programming**» menu, the unit will automatically return to the «**Wait mode Screen**» screen without asking if you wish to save the programming that you were carrying out. This temporary programming will be stored in an intermediate memory, as long as the unit is not turned off. If you wish to continue with the programming that you were carrying out and record it return to the step where you left off.
The programming that the unit executes is the last one to be recorded.*

STEP BY STEP SETTING CIRCUITS PROGRAMMING

NOTE: Settings should be programmed in order of execution from 00:00 Hours onwards
A step by step explanation of the different setting circuits programming is given below:

WEEKLY PROGRAMMING

Weekly Programming allows entering programming for the setting circuits, for each of the days of the week. By manufacturing default the unit has the C1 astronomic circuit programmed with a weekly programme for each day (SUNRISE+0 / SUNSET+0).



New:

- 1.- Press the «OK» key to access menus.
Enter the access password if required (see «Password» chapter).
- 2.- Select the menu «**TELE PROG**» with key ▲ or ▼ and press the «OK» key.
- 3.- With key ▲ or ▼, choose the **Type of programming calendar** «Pro MON», «Pro TUE», «Pro WED», «Pro THUR», «Pro FRI», «Pro SAT» or «Pro SUN» for programming one day a week or if you wish to copy the same programming for all the days of the week choose «Pro ALL» and press the «OK» key.
- 4.- With key ▲ or ▼, choose the setting circuit to be programmed and press the «OK» key again.
- 5.- Choose the Programming type to be carried out and follow the corresponding steps to do so.
 - 5.1.- TIME programming.
 - 5.2.- Programming in relation to SUNRISE or SUNSET.
 - 5.3.- Not PROGRAMMED.

NOTE

- The type «Pro ALL» allows entering once only the same programming for all the days of the week. Afterwards you can modify the days of the week that need to have some peculiarity with regard to the rest of the days.

5.1.- TIME programming

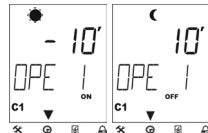
The TIME Programming type allows programming turning on and/or off the selected setting circuit, from the hour and minute of the day indicated.



- A.- With key ◀ or ▶ select option **Number of Setting** (OPE n, where n is the number of the setting to be programmed), which will flash on screen.
- B.- With key ▲ or ▼ respectively increase or decrease the **Setting number** to be programmed.
- C.- With key ◀ or ▶ select the option **Programming type**.
One of the symbols will flash on screen.
- D.- With key ▲ or ▼ select the TIME Programming type, which is indicated by the clock symbol.
- E.- Press key ▶
The value of the hours will flash on screen.
- F.- With key ▲ or ▼ respectively increase or decrease the hours.
- G.- Press the key again ▶
The value of the minutes will flash on screen.
- H.- With key ▲ or ▼ respectively increase or decrease the minutes.
- I.- With key ◀ or ▶ select the **setting** option, OFF or ON will flash on screen.
- J.- With key ▲ or ▼ choose OFF to turn off or ON to turn on the setting circuit.
- K.- Follow step 6 (see page 28).

5.2.- Programming in relation to SUNRISE or SUNSET

The Programming type in relation to SUNRISE or SUNSET enables advancing or delaying +/- 240 minutes the turning on and/or off of the setting circuit selected, depending on the daily calculation of SUNRISE and of SUNSET.



A.- With key ◀ or ▶ select the **Setting number** option

(OPE n, where n is the number of the setting to be programmed), which will flash on screen.

B.- With key ▲ or ▼ respectively increase or decrease the **Setting number** to be programmed.

C.- With key ◀ or ▶ select the **Programming type** option.

Some of the symbols will flash on screen.

D.- With key ▲ or ▼ select the Programming type in relation to SUNRISE, which is indicated by the symbol of the Sun or the Programming type in relation to SUNSET, which is indicated by the symbol of the Moon.

E.- Press key ▶, the value of the minutes will flash on screen.

F.- With key ▲ or ▼ respectively increase or decrease the minutes.

G.- With key ◀ or ▶ select the **Setting** option, OFF or ON will flash on screen.

H.- With key ▲ or ▼ choose OFF to turn off or ON to turn on the setting circuit.

I.- Follow step 6 (see page 28).

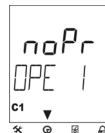
5.3.- Not PROGRAMMED

The Programming type Not PROGRAMMED allows you to erase (cancel) the indicated setting of turning on and/or turning off the selected setting circuit.

A.- Follow steps «A» to «C» of the previous point (5.2).

B.- With key ▲ or ▼ select the Programming Type Not PROGRAMMED, on screen the text «noPr» will be seen to flash.

C.- Follow step 6 (see page 28).



- 6.- Once step 5 is completed, confirm with the «OK» key («SEE OPE» will appear for an instant).
- 7.- Repeat steps 5 and 6 to programme setting 2 and so on if desired (maximum 8).
- 8.- Use the key **⬅** repeatedly to return to the «Wait mode Screen».
Before the unit returns to the «Wait mode Screen», it will ask if you wish to record the programming that «SEE PRG» has carried out.
- 9.- With key **▲** or **▼** select the indication «Y» if you wish to record the programming or the indication «N» if you do not wish to record it; it will flash on screen and you press the «OK» key.

NOTES

- *If for 60 seconds no key at all is pressed in the «Programming» menu, the unit will automatically return to the «Wait mode Screen» without asking if you wish to save the programming that you were carrying out. This temporary programming will be stored in an intermediate memory, as long as the unit is not turned off. If you wish to continue with the programming that you were carrying out and record it return to the step where you left off.
The programming that the unit executes is the last one to be recorded.*
- *The different setting circuits can be programmed equally in relation to Sunrise and Sunset in minutes, or else, hour and minute of turning off/on or combination of both methods.
(See «Programming Examples» at the end of this chapter).*

Edit:

- 1.- Press the «OK» key to access menus (enter the access password if required).
- 2.- Select the menu «EELE PRG» with key **▲** or **▼** and press the «OK» key.
- 3.- With key **▲** or **▼**, choose the Type of programming calendar **PRO MON**», «PRO TUE», «PRO WEDN», «PRO THUR», «PRO FRII», «PRO SAT» or «PRO SUN» or «PRO ALL» that you wish to edit and press the «OK» key.
- 4.- With key **▲** or **▼**, choose the Setting circuit to be edited and press the «OK» key again.
- 5.- With key **▲** or **▼** view the settings that are programmed in the unit.

5a If you wish to modify any setting follow steps 5 to 9 of the **WEEKLY PROGRAMMING - New -** (see page 25).

5b If you don't wish to modify any setting press the **⬅** key repeatedly.

Erase:

IMPORTANT: if you erase the programming of a week day, you will erase all the programmed settings of all of the setting circuits of this selected day.

- 1.- Press the **«OK»** key to access menus (enter the access password if required).
- 2.- Select the menu **«ELE PROG»** with key **▲** or **▼** and press the **«OK»** key.
- 3.- With key **▲** or **▼**, choose the **Type of programming calendar** **PRO MON**», **PRO TUE**», **PRO WEDN**», **PRO THUR**», **PRO FRI**», **PRO SAT**» or **PRO SUN**», of which you wish to erase the programmed settings and press the **«OK»** key.
NOTE: The weekly programming **PRO ALL**», **DOES NOT** have an erase option.
- 4.- With key **◀** or **▶**, choose the screen **«dEL»**.
- 5.- Press the **«OK»** key again.
«dEL ?» will appear flashing on screen .
- 6.- Confirm with the **«OK»** key.
- 7.- Use the key **⬅** repeatedly to return to the **«Wait mode Screen»**.
Before the unit returns to the **«Wait mode Screen»**, it will ask if you wish to erase the **«SEt PRG»** programming.
- 8.- With key **▲** or **▼** select the indication **«Y»** if you wish to erase the programming or the indication **«N»** if you do not wish to erase it; it will flash on screen and you press the **«OK»** key.

SPECIAL DAY PROGRAMMING

Special Day Programming allows programming specific days of the year so that they behave totally differently from the other days, such as: national, state, county and local Bank Holidays, festive events, etc. This programming can be done for every year «**PRO SDAYS**» or for one specific year «**PRO EDAYS**» and it has priority over the weekly programming.



New:

1.- Press the «**OK**» key to access menus.

Enter the access password if required (see chapter «**Password**»).

2.- Select the «**TELE PROG**» menu with key ▲ or ▼, and press the «**OK**» key.

3.- With key ▲ or ▼ select the **Type of programming calendar** «**PRO SDAYS**» if you wish to carry out special programming for every year or «**PRO EDAYS**» for a specific year (press «**OK**» and with key ▲ or ▼ enter the year) and press the «**OK**» key.

4.- With key ◀ or ▶ select the screen «**dAY**».

5.- Press the «**OK**» key.

First of all the value of the day will flash.

6.- With key ◀ or ▶ select the value to be modified, which will flash on screen.

7.- With key ▲ or ▼ respectively increase or decrease the value that is flashing at that moment on screen.

8.- Press the «**OK**» key.

9.- Follow steps 4 to 9 of the **WEEKLY PROGRAMMING - New** - (see page 25).

Edit:

- 1.- Press key **«OK»** to access menus (enter the password if required).
- 2.- Select the menu **«ELE PROG»** with key **▲** or **▼** and press the **«OK»** key.
- 3.- With key **▲** or **▼** choose the **Type of programming calendar** **«PRO DAY»** (every year) or **«PRO E DAY»** (for a specific year, you must select the year with key **▲** or **▼**), where the Special day to be edited is, and press the **«OK»** key.
- 4.- With key **▲** or **▼** select the Special day to be edited.
- 5.- Press the **«OK»** key to edit the settings (see step 5a) or select with key **◀** or **▶** the **«Edit»** screen and press the **«OK»** key to modify the day (see step 5b).
 - 5a If you wish to modify any setting follow steps 4 to 9 of the **WEEKLY PROGRAMMING - New** - (see page 25).
 - 5b If you wish to modify the day follow steps 6 and 7 of the **SPECIAL DAY PROGRAMMING - New** (see page 30). And confirm with the **«OK»** key.
Press the **←** key repeatedly for exit and record the programming.

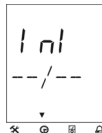
Erase:

IMPORTANT: if you erase the programming special day, you will erase all the programmed settings of all of the setting circuits of this selected day.

- 1.- Press the **«OK»** key to access menus (enter the access password if required).
- 2.- Select the menu **«ELE PROG»** with key **▲** or **▼** and press the **«OK»** key.
- 3.- With key **▲** or **▼**, choose the **Type of programming calendar** **«PRO DAY»** (every year) or **«PRO E DAY»** (for a specific year, you must select the year with key **▲** or **▼**), where the Special day, and press the **«OK»** key.
- 4.- With key **▲** or **▼**, choose the programming to erase.
- 5.- Follow steps 4 to 8 of the **WEEKLY PROGRAMMING - Erase** - (see page 29).

PROGRAMMING FOR A RANK OF DATES

Programming for a Rank of Dates enables entering different programming for a specific Rank of Dates such as: holiday seasons, Christmas holidays, annual events, etc. This programming can be carried out for every year «P r o S I A Y S» or for a specific year «P r o E I A Y S» and has priority over the weekly programming.



New:

- 1.- Press key «OK» to access menus.
Enter the access password if required (see chapter «Password»).
- 2.- Select the menu «**TELE PROG**» with key ▲ or ▼ and press the «OK» key.
- 3.- With key ▲ or ▼ choose the **Type of programming calendar** «P r o S I A Y S» if you wish to carry out a rank programming for every year or «P r o E I A Y S» for a specific year (press «OK» and with key ▲ or ▼ enter the year) and press the «OK» key.
- 4.- With key ◀ or ▶ select the screen «1 n1».
- 5.- Press the «OK» key to enter the rank starting date.
First of all the value of the day will flash.
- 6.- With key ◀ or ▶ select the value to be modified, which will flash on screen.
- 7.- With key ▲ or ▼ respectively increase or decrease the value that is flashing on screen at that moment.
- 8.- Press the «OK» key to enter the rank finishing date.
«E n d» will appear on screen and the value of the day with flash first.
- 9.- Follow steps 6 and 7 and press the «OK» key.
- 10.- Follow steps 4 to 9 of the **WEEKLY PROGRAMMING - New** - (see page 25).

Edit:

- 1.- Press key «OK» to access menus (enter the password if required).
- 2.- Select the menu «**TELE PROG**» with key ▲ or ▼ and press the «OK» key.
- 3.- With key ▲ or ▼ choose the **Type of programming calendar** «**PRO S DAYS**» (every year) or «**PRO E DAYS**» (for a specific year, you must select the year with key ▲ or ▼), of the rank to be edited and press the «OK» key.
- 4.- With key ▲ or ▼ select the screen «**l n l** » of the rank to be edited.
- 5.- Select the screen «**End**» and press the «OK» key to edit the setting (see step 5a) or select with key ◀ or ▶ the «**Edt**» screen of start of rank or the end of rank screen and press the «OK» key to modify the corresponding date of the rank (see step 5b).
 - 5a If you wish to modify any setting follow steps 4 to 9 of the **WEEKLY PROGRAMMING - New** - (see page 25).
 - 5b If you wish to modify the rank of dates follow steps 6 and 7 of the **PROGRAMMING FOR A RANK OF DATES - New** (see page 32). And confirm with the «OK» key.
Press the ⬅ key repeatedly for exit and record the programming.

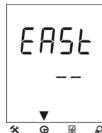
Erase:

IMPORTANT: if you erase the programming for a rank of dates, you will erase all the programmed settings of all of the setting circuits of this selected rank of dates.

- 1.- Press the «OK» key to access menus (enter the access password if required).
- 2.- Select the menu «**TELE PROG**» with key ▲ or ▼ and press the «OK» key.
- 3.- With key ▲ or ▼, choose the **Type of programming calendar** «**PRO S DAYS**» (every year) or «**PRO E DAYS**» (for a specific year, you must select the year with key ▲ or ▼), where rank of dates, and press the «OK» key.
- 4.- With key ▲ or ▼, choose the programming to erase.
- 5.- Follow steps 4 to 8 of the **WEEKLY PROGRAMMING - Erase** - (see page 29).

PROGRAMMING IN RELATION TO EASTER SUNDAY

Programming In Relation to Easter Sunday enables programming special days such as: Palm Sunday, Maundy Thursday, Good Friday, Easter Sunday and all those movable days that depend on the Christian Easter. This programming can be done for every year «**PRO 5 DAYS**» or for a specific year «**PRO E DAYS**» and has priority over the weekly programming.



New:

- 1.- Press the «**OK**» key to access menus.
Enter the access password if required (see chapter «**Password**»).
- 2.- Select the «**EELE PROG**» menu with key **▲** or **▼**, and press the «**OK**» key.
- 3.- With key **▲** or **▼** select the **Type of programming calendar** «**PRO 5 DAYS**» if you wish to carry out programming In Relation to Easter Sunday for every year or «**PRO E DAYS**» for a specific year (press «**OK**» and with key **▲** or **▼** enter the year) and press the «**OK**» key.
- 4.- With key **◀** or **▶** select the screen «**EAST**» and press the «**OK**» key.
- 5.- With key **▲** or **▼** respectively increase or decrease the value that is flashing at that moment on screen.

Value 0 corresponds to **Easter Sunday**, on from here on, you can programme 99 days after (+99) or before (-99) this day.

Examples: Value -7 corresponds to **Palm Sunday** and value +63 corresponds to **Corpus Christi Sunday**.

- 6.- Confirm with the «**OK**» key.
- 7.- Follow steps 4 to 9 of the **WEEKLY PROGRAMMING - New** - (see page 25).

Edit:

- 1.- Press key «OK» to access menus (enter the password if required).
- 2.- Select the menu «**TELE PROG**» with key ▲ or ▼ and press the «OK» key.
- 3.- With key ▲ or ▼ choose the **Type of programming calendar** «**PRO DAY**» (every year) or «**PRO E DAY**» (for a specific year, you must select the year with key ▲ or ▼), where there is the day In Relation to Easter Sunday to be edited and press the «OK» key.
- 4.- With key ▲ or ▼ select the day in Relation to Easter Sunday to be edited.
- 5.- Press the «OK» key to edit the settings (see step 5a) or select with key ◀ or ▶ the «**Edit**» screen and press the «OK» key to modify the day (see step 5b).
 - 5a If you wish to modify any setting follow steps 4 to 9 of the **WEEKLY PROGRAMMING - New** - (see page 25).
 - 5b If you wish to modify the day follow steps 5 of the **PROGRAMMING IN RELATION FOR EASTER SUNDAY - New** (see page 34). And confirm with the «OK» key.
Press the ◀ key repeatedly for exit and record the programming.

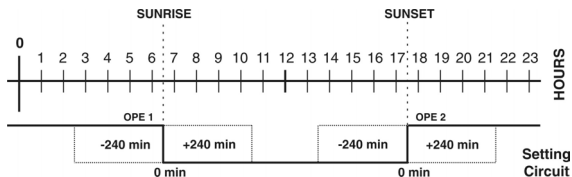
Erase:

IMPORTANT: if you erase the programming in relation to easter Sunday, you will erase all the programmed settings of all of the setting circuits of this selected day.

- 1.- Press the «OK» key to access menus (enter the access password if required).
- 2.- Select the menu «**TELE PROG**» with key ▲ or ▼ and press the «OK» key.
- 3.- With key ▲ or ▼, choose the **Type of programming calendar** «**PRO DAY**» (every year) or «**PRO E DAY**» (for a specific year, you must select the year with key ▲ or ▼), where in relation to easter Sunday, and press the «OK» key.
- 4.- With key ▲ or ▼, choose the programming to erase.
- 5.- Follow steps 4 to 8 of the **WEEKLY PROGRAMMING - Erase** - (see page 29).

PROGRAMMING EXAMPLES

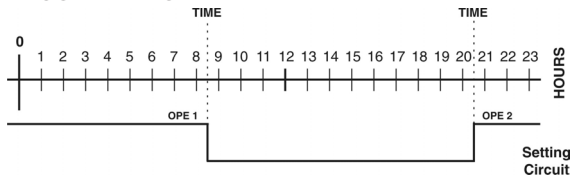
PROGRAMMING EXAMPLES SUNRISE - SUNSET



PROGRAMMING OPTIONS ON THE DIFFERENT SETTINGS:

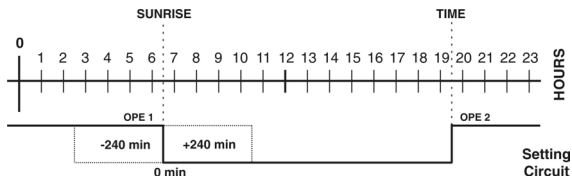
Setting Number:	OPE 1
Programming Type:	Programming in relation to Sunrise
Hour / Minute:	-15 (Maximum +/- 240 minutes)
Setting:	OFF
Setting Number:	OPE 2
Programming Type:	Programming in relation to Sunset
Hour / Minute:	+15 (Maximum +/- 240 minutes)
Setting:	ON

PROGRAMMING EXAMPLE TIME - TIME



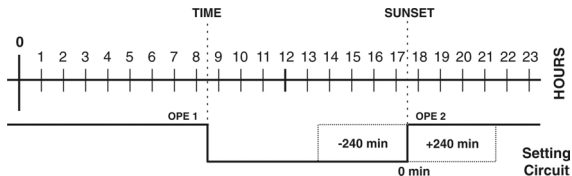
Setting Number:	OPE 1
Programming Type:	Time Programming
Hour / Minute:	08:30
Setting:	OFF
Setting Number:	OPE 2
Programming Type:	Time Programming
Hour / Minute:	20:30
Setting:	ON

PROGRAMMING EXAMPLE SUNRISE - TIME



Setting Number:	OPE 1
Programming Type:	Programming in relation to Sunrise
Hour / Minute:	0 (Maximum +/- 240 minutes)
Setting:	OFF
Setting Number:	OPE 2
Programming Type:	Time Programming
Hour / Minute:	19:30
Setting:	ON

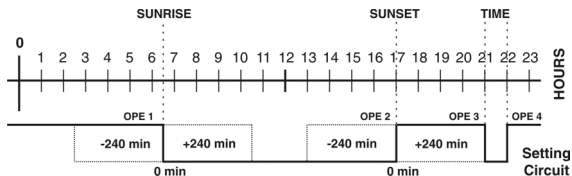
PROGRAMMING EXAMPLE TIME - SUNSET



PROGRAMMING OPTIONS ON THE DIFFERENT SETTINGS:

Setting Number:	OPE 1
Programming Type:	Time Programming
Hour / Minute:	08:30
Setting:	OFF
Setting Number:	OPE 2
Programming Type:	Programming in relation to Sunset
Hour / Minute:	0 (Maximum +/- 240 minutes)
Setting:	ON

PROGRAMMING EXAMPLE SUNRISE - SUNSET - TIME



Setting Number:	OPE 1
Programming Type:	Programming in relation to Sunrise
Hour / Minute:	0 (Maximum +/- 240 minutes)
Setting:	OFF
Setting Number:	OPE 2
Programming Type:	Programming in relation to Sunset
Hour / Minute:	0 (Maximum +/- 240 minutes)
Setting:	ON
Setting Number:	OPE 3
Programming Type:	Time Programming
Hour / Minute:	21:00
Setting:	OFF
Setting Number:	OPE 4
Programming Type:	Time Programming
Hour / Minute:	22:00
Setting:	ON

NOTE

- *Programming Type: "Not Programmed" in the rest of Settings (OPE n).*

TEST MENU

The menu «**EELE TEST**» allows you to carry out a test of the unit and the installation: reading and pre-selection of the counters, testing the keyboard and the display and remote control the setting circuits, etc.



Pressing the «OK» key we access the main menu. Select the menu «**EELE TEST**» with key ▲ or ▼ and confirm with the «OK» key again.

The menu «**EELE TEST**» consists of a series of submenus, which are explained below.

READING ELECTRICAL PARAMETERS

The submenu «**Reading electrical parameters**» allows reading the instantaneous values of the electrical parameters of each of the three phases (Voltage, Intensity and Active Power, Reactive Power and Power Factor), apart from seeing and pre-selecting the active energy counter and the reactive energy counter.



Reading electrical parameters:

1.- Press the «**OK**» key to access menus.

Enter the access password if it is required (see «**Password**» chapter).

2.- Select the «**ELE TEST**» menu with key ▲ or ▼ and press the «**OK**» key.

3.- With key ▲ or ▼ select the submenu «**ELEC PARAM**» and press the «**OK**» key.

4.- With keys ◀ or ▶ select the electrical parameter that you wish to read.

5.- With keys ▲ or ▼ select the phase to reading. The reading of the phase L1, L2 or L3 correspond like functioning «Three-phase networks with neutral», while if we form the way of functioning «Three-phase networks 220 VAC without neutral» (to see last note) the reading of L1 corresponds to L1-L2, the reading L2 corresponds to L2-L3 and the reading L3 corresponds to L1-L3.

6.- Use key ⬅ to exit from the submenu.

NOTES

- On reading an electrical parameter, the symbol **MAX** (maximum setting value) or **MIN** (minimum setting value) may appear, which will indicate to us that this parameter has an alarm produced by the measurement of a value outside the margin programmed for this setting.
- If the submenu option «**Intensity transformers**» from the «**SETUP**» menu is configured as **NO**, it will only read the voltage value.
- If the reading of the instantaneous values of intensity and/or active power equals 0, check the wiring of the intensity transformers (see «**Wiring systems**» chapter).
- The way of functioning only will be able to be formed across the System **TELEASTRO.NET**.

Preselection active energy counter and reactive energy counter:



- 1.- Press the «OK» key to access menus.
Enter the access password if it is required (see «Password» chapter).
- 2.- Select the «ELEC TEST» menu with key ▲ or ▼ and press the «OK» key.
- 3.- With key ▲ or ▼ select the submenu «ELEC PARAM» and press the «OK» key.
- 4.- With keys ◀ or ▶ select the active energy counter «C KWh» or the reactive energy counter «KVARh» screen.
The value of the energy counter is shown.
- 5.- Press the «OK» key again to enter the preselection value in KWh. with a decimal.
The first digit on the right (the decimal) will appear flashing on screen.
- 6.- With key ◀ or ▶ select the digit, which will flash on screen.
- 7.- With keys ▲ or ▼ respectively increase or decrease the digit that is flashing.
- 8.- Repeat steps 6 and 7 until entering the total preselection.
- 9.- Confirm with the «OK» key («SET OK» will appear for a moment) or press key ⬅ to cancel.
- 10.- Use key ⬅ to exit from the submenu.

NOTES

- If the submenu option «Intensity transformers» of the «SETUP» menu is configured as NO, the active energy counter will not be shown.
- Maximum preselection value is 99999999.9.

READING ANALOGICAL MEASUREMENTS MA



The submenu «**Reading analogical measurements MA**» allows reading the instantaneous value of the analogical inputs where insulation level transformers, temperature probes, photocell control etc are connected.

Reading analogical inputs:

1.- Press the «**OK**» key to access menus.

Enter the access password if it is required (see «**Password**» chapter).

2.- Select the «**EELE TEST**» menu with key ▲ or ▼ and press the «**OK**» key.

3.- With key ▲ or ▼ select the submenu «**Ad MEDII**» and press the «**OK**» key.

4.- With key ▲ or ▼ select the analogical input to be read (value in measurement units).

5.- Use key ⬅ to exit from the submenu.

NOTES

- When reading an analogical input, the symbol **MAX** (maximum setting value) or **MIN** (minimum setting value) may be shown, which indicates that said parameter has an alarm produced by the measurement of a value outside the margin programmed for this setting.
- If the submenu option «**Intensity transformers**» of the «**SETUP**» menu is configured as **NO**, the 4 «**MA**» analogical inputs will be read (value in measuring units).
- Measuring units and scale factors of the analogical inputs can only be configured through the **TELEASTRO.NET** System.

STATUS DIGITAL ALARM INPUTS CA

The submenu «Status digital alarm inputs CA» allows viewing the physical status of each of the digital alarm inputs, wherever auxiliary contacts of magnetothermals, differentials, switchboard door control, etc have been connected.



Consultation of status digital alarm inputs:

- 1.- Press the «OK» key to access menus.

Enter the access password if it is required (see «Password» chapter).

- 2.- Select the «ELE TEST» menu with key ▲ or ▼ and press the «OK» key.
- 3.- With key ▲ or ▼ select the submenu «rEAd ALARM» and press the «OK» key.
- 4.- With key ▲ or ▼ the screen changes and each of them shows the status of the digital alarm input selected.

If the «On» indication is displayed on screen it tells us that the digital alarm input «CAn» is physically open, while if «OFF» is displayed it tells us that the digital input is closed.

«n» --> indicates the number of digital alarm input.

- 5.- Use key ⬅ to exit from the submenu.

NOTES

- If the digital inputs CA5 and CA6 are configured as beat counters (by default **NO**) their status will not be displayed on screen.
- If digital input CA7 is configured as manual (by default **YES**) its status will be displayed as «On» (Manual) or «Auto» (Automatic) according to the status of said digital input.
- Configuration of digital inputs CA5, CA6 and CA7 can only be configured through the TELEASTRO.NET System.

READING HOURS COUNTER

The submenu «**Reading Hours Counter**» allows reading and pre-selecting the counters of total hours of connection of the unit setting circuits.



Reading hours counter:

1.- Press the «**OK**» key to access menus.

Enter the access password if required (see «**Password**» chapter).

2.- Select the menu «**TELE TEST**» with key ▲ or ▼ and press the «**OK**» key.

3.- With key ▲ or ▼, choose the submenu «**Cnt HOURS**» and press the «**OK**» key.

4.- With the keys ▲ or ▼, select the counter of the setting circuit connection hours to be read.

5.- Use the key ← to exit from the submenu.

NOTE

- When reading hours counter, the symbol **MAX** (maximum setting value) may be shown, which indicates alarm.

Preselection hours counter:



1.- Press the «OK» key to access menus.

Enter the access password if required (see «Password» chapter).

2.- Select the menu «**EELE TEST**» with key ▲ or ▼ and press the «OK» key.

3.- With key ▲ or ▼ ,choose the submenu «**Cnt HOURS**» and press the «OK» key.

4.- With the keys ▲ or ▼ select the counter of the setting circuit connection hours to be pre-selected.

5.- Press the «OK» key again to enter the value of preselection in hours.

The first digit of the value will appear flashing on the screen.

6.- With key ◀ or ▶ select the digit, which will flash on screen.

7.- With keys ▲ or ▼ respectively increase or decrease the digit that is flashing.

8.- Repeat steps 6 and 7 until entering the total pre-selection.

9.- Confirm with the «OK» key («**SEE OK**» will appear for an instant) or press the key ⬅ to cancel.

10.- Use the key ⬅ to exit from the submenu.

NOTE

- The maximum pre-selection value is 9999 hours.

STATUS OF THE UNIT

The submenu «**Status Of The Unit**» allows viewing and modifying the functioning status of the unit to Automatic mode or to Remote mode.

Automatic Mode: this is the normal functioning status; the unit controls the setting circuits according to its programming.

Remote Mode: this is the prior functioning status, in order to be able to activate or deactivate a setting circuit by keyboard. This functioning mode with deactivate the automatic programming.



Modification of functioning status:

1.- Press the «**OK**» key to access menus.

Enter the access password if required (see «**Password**» chapter).

2.- Select the menu «**TELE TEST**» with key ▲ or ▼ , and press the «**OK**» key.

3.- With key ▲ or ▼ , choose the submenu «**SEAL**».

The option «**SEAL AUTO**» is shown on screen if the unit is in Automatic mode or the option «**SEAL REMCO**» if it is in remote mode.

4.- Press the «**OK**» key if you wish to modify the option.

The indication «**AUTO**» or «**REMCO**» of the corresponding option will flash.

5.- Modify the indication of the option with key ▲ or ▼

6.- Confirm with the «**OK**» key or press the key ⬅ to cancel.

7.- Use the key ⬅ to exit from the submenu.

NOTE

- In REMOTE CONTROL mode: the unit will retain this functioning status for 12 hours, reverting to Automatic mode status once this time has lapsed. Unless Automatic mode status is re-established beforehand or the unit is reinitialised.

REMOTE MODE

The submenu «**Remote Mode**» allows viewing and modifying the status of the unit setting circuits; to do so, the unit must be in Remote Control status (see submenu «**Status of the Unit**» in this same manual).



Setting circuits remote mode:

1.- Press the «**OK**» key to access menus.

Enter the access password if required (see «**Password**» chapter).

2.- Select the «**ELE TEST**» menu with key ▲ or ▼ and press the «**OK**» key.

3.- With key ▲ or ▼ choose the submenu «**l n l REMCT**» and press the «**OK**» key.

4.- With key ◀ or ▶ select the setting circuit to be remote controlled.

5.- With key ▲ or ▼ select the indication «**On**» (To activate the setting circuit) or the indication «**OFF**» (To deactivate the setting circuit), which will flash on screen at that moment.

6.- Confirm with the «**OK**» key to validate.

7.- Repeat steps 4 to 6 to remote control further setting circuits if so wished.

8.- Use the key ◀ to exit from the submenu.

NOTES

- This submenu will be displayed on screen if the functioning status of the unit is REMOTE.
- Setting circuits can't be remote controlled if they are on safety time. In this case, the unit will display for a moment on screen the time left in minutes in order to be able to remote control the selected setting circuit.
- The units will remain in Remote functioning status for a maximum of 12 hours.

MODEM TEST

The submenu «Modem test» allows checking the status of the modem connected in the unit.

Modem testing:



- 1.- Press the «OK» key to access menus.

Enter the access password if it is required (see «Password» chapter).

- 2.- Select the «**TEST TEST**» menu with key ▲ or ▼ and press the «OK» key.
- 3.- With the key ▲ or ▼ select the submenu «**TEST MODEM**» and press the «OK» key.

The current status of the modem is shown on screen. The statuses that are displayed on screen are as explained below:

- **NO MODEM**: Modem not detected.
 - **NO DIAL**: There is no GPRS coverage.
 - **PIN MODEM**: SIM card PIN incorrect.
 - **PUK MODEM**: The SIM card needs the PUK to be entered.
 - **net ERROR**: GPRS settings wrong and therefore the GPRS connection is not possible.
 - **INI MODEM**: Modem initialization: identification, preparation and introduction of the PIN to connect.
 - **HES MODEM**: Modem detected without connection to the TELEASTRO.NET System.
 - **net MODEM**: Modem detected with connection to the TELEASTRO.NET System.
- 4.- If the current status of the GPRS modem is different from «**net MODEM**», press the «OK» key again to enter «**run TEST**» and carry out modem detection and connection to the TELEASTRO.NET System again.
 - 5.- Use key ⬅ to exit from the submenu.

NOTE

- If the unit displays the status «**net MODEM**» and you press the «OK» key it will not carry out «**run TEST**», because the unit is connected to the TELEASTRO.NET System.

SIGNAL TEST

The submenu «Signal Test» allows to consult the quality of sign.

Testing sign:

- 1.- Press the «OK» key to access menus.

Enter the access password if required (see «Password» chapter).

- 2.- Select the menu «**TEST TEST**» with key ▲ or ▼ and press the «OK» key.
- 3.- With key ▲ or ▼, choose the submenu «**TEST SIGNAL**» and press the «OK» key.

The quality of sign appears on screen.

Where:

00 (unknown Sign), 01 (very low sign), 02 (sign goes down), 03 (correct sign) and 04 (excellent sign).

- 4.- Use the key ⬅ to exit from the submenu.



PERIPHERIC TEST

The submenu «Peripheric Test» allows to test the communication with the different peripheral connected in the port RS485 of the equipment.

Testing peripheral:

- 1.- Press the «OK» key to access menus.

Enter the access password if required (see «Password» chapter).

- 2.- Select the menu «**TEST TEST**» with key ▲ or ▼ and press the «OK» key.
- 3.- With key ▲ or ▼, choose the submenu «**TEST PERIF**» and press the «OK» key.
- 4.- By means of the key ▲ or ▼ select the peripheral one and touch the «OK». It appears on screen «**TEST OK**»; if the communication with the peripheral one is correct, or «**TEST ERROR**» if it is not correct.
- 5.- Use the key ⬅ to exit from the submenu.



KEYBOARD TEST

The submenu «**Keyboard Test**» allows testing and checking the correct functioning of the unit keys.

Testing keyboard:

- 1.- Press the «**OK**» key to access menus.

Enter the access password if required (see «**Password**» chapter).

- 2.- Select the menu «**TELE TEST**» with key ▲ or ▼ and press the «**OK**» key.
- 3.- With key ▲ or ▼, choose the submenu «**TEST KEY**» and press the «**OK**» key.
- 4.- Press the key that you wish to test, which will appear on screen and the number of times that it has been pressed (If the key is repeated or kept pressed, indicating the self-repetition of the same).
- 5.- Press the «**OK**» key twice to exit from the submenu.



DISPLAY TEST

The submenu «**Display Test**» allows testing the display light up.

Testing display:

- 1.- Press the «**OK**» key to access menus.

Enter the access password if required (see «**Password**» chapter).

- 2.- Select the menu «**TELE TEST**» with key ▲ or ▼ and press the «**OK**» key.
- 3.- With key ▲ or ▼, choose the submenu «**TEST DISP**».
- 4.- Whenever you press the «**OK**» key, you will cyclically access the different screens comprising the display test. The display test consists of 3 screens, which are described below:
 - On the first, the entire display light up is activated.
 - On the second, only the digits are activated.
 - On the third screen all the symbols without any digit are activated.
- 5.- Use the key ◀ to exit from the submenu.



ALARM MENU



The «**TELE ALARM**» menu allows viewing the active alarms detected by the TELEASTRO. This menu will only be displayed if the unit is connected to the TELEASTRO.NET System, and if you try to access it without being connected to this System, «**no VALID**» will appear on screen for a moment.



Pressing the «OK» key we access the main menu. Select the menu «**TELE ALARM**» with the key ▲ or ▼ and confirm with the «OK» key again.

Viewing the active alarms detected by the TELEASTRO by screen:

- Alarm installation does not switch on due to voltage --> «**ALAR noV'L**».
- Alarm installation does not switch on due to consumption --> «**ALAR noIL**».
- Alarm of voltage at full power or on saving --> «**ALAR V'Lz**» (z = number of phase).
- Alarm of intensity on full power or on saving --> «**ALAR ILz**» (z = number of phase).
- Alarm of power on full power or on saving --> «**ALAR PLz**» (z = number of phase).
- Alarm power factor inductive --> «**ALAR PFz I**» (z = number of phase).
- Alarm power factor capacitive --> «**ALAR PFz C**» (z = number of phase).
- Alarm consumption in turned off installation --> «**ALAR Robz**» (z = number of phase).
- Alarm digital alarm inputs CA --> «**ALAR CAB**» (b = number of digital alarm input).
- Alarm locking differential RDRM90 --> «**ALAR RGUb**» (b = number of digital alarm input).
- Alarm analogical inputs MA --> «**ALAR MAx**» (x = number of analogical input).
- Alarm active energy counter --> «**ALAR KWh**».
- Alarm reactive energy counter --> «**ALAR KVARh**».
- Alarm total connection hours counters --> «**ALAR HCy**» (y = number setting circuit).
- Alarm beat counter CA5 and CA6 --> «**ALAR PULb**» (b = number digital alarm input).

Viewing the active alarms:

1.- Press the «OK» key to access menus.

Enter the access password if it is required (see «Password» chapter).

2.- Select the «ELE ALARM» menu with key ▲ or ▼ and press the «OK» key.

The number of active alarms detected by the TELEASTRO will be displayed on screen.

3.- With the ▲ or ▼ the different alarms are shown.

4.- Use key ⬅ to exit from viewing alarms.

NOTES

- If «Wait mode» comes up on screen, the bell symbol indicates that there is some alarm active in the unit.
- On reading an alarm, the symbol **MAX** (maximum setting value) or **MIN** (minimum setting value) may appear, telling us that said alarm has occurred because of being outside the margin programmed for this setting.
- Also on reading an alarm the symbol «m» or «r» may come up, which indicates whether said alarm has occurred in maximum power time or in savings time.



Examples of interpretation on viewing alarms on screen:

--> Alarm of maximum intensity in phase L1 of savings time.



--> Alarm of minimum power in phase L1 in full power time.

CONSULTATION AND PROGRAMMING SMS

The TELEASTRO has SMS messaging, allowing us to send SMS consultation and programming messages, as described below.

SMS CONSULTATION MESSAGES

With the following SMS messages, you can consult different data of the installation, as well as the basic configuration parameters of the unit:

pswd*<input type="checkbox"/>CG?	Geographical coordinates and GMT.
pswd*<input type="checkbox"/>CH?	Summer/Winter time change and dates of change.
pswd*<input type="checkbox"/>SUN?	Sunrise and Sunset of the day in hand.
pswd*<input type="checkbox"/>CR?	Status of setting circuits.
pswd*<input type="checkbox"/>CRn?	Next setting of the requested setting circuit.
pswd*<input type="checkbox"/>TMD?	Functioning mode of setting circuits.
pswd*<input type="checkbox"/>VL?	Voltage in each of the three phases.
pswd*<input type="checkbox"/>MA?	Intensity of current in each of the phases or analogical measurements.
pswd*<input type="checkbox"/>PL?	Power in each of the three phases.
pswd*<input type="checkbox"/>CA?	Status of the 7 digital alarm inputs CA.
pswd*<input type="checkbox"/>CAN?	Status of the digital alarm input CA requested with its description.
pswd*<input type="checkbox"/>PCRn?	Special settings sent with the message «PCR=».
pswd*<input type="checkbox"/>VER?	Version of the unit.
pswd*<input type="checkbox"/>SN?	Serial number of the unit.
pswd*<input type="checkbox"/>PTFn?	Telephone number of sending SMS requested (To consult this message, the user's SMS programming password has to be entered).

NOTE: For versions of firmware inferiors to the "1.7", do not introduce password (**pswd* ☐**) in consultation messages SMS.

SMS PROGRAMMING MESSAGES

pswd* ☐ CG=xx:yyk ☐ rrr:ssu ☐ hh:mm??GMT

pswd* ☐ CH=Y ☐ d1/m1/a1 ☐ d2/m2/a2?

pswd* ☐ TMD=AUTO?

pswd* ☐ TMD=TELE?

pswd* ☐ TCRn=ON?

pswd* ☐ TCRn=OFF?

pswd* ☐ PCRn=pp=man1,pp=man2,d3/m3/a3>d4/m4/a4?

pswd* ☐ PTFz=eeeeeeee?

pswd* ☐ NMA=Y?

pswd* ☐ NMA=N?

pswd* ☐ TSV=Y?

pswd* ☐ TSV=N?

Geographical coordinates and GMT

Time change and date of change

Automatic functioning mode

Remote control functioning mode

Active setting circuit (1)

Deactivate setting circuit

Programme setting circuit (2)

Programme telephone number sending SMS

Deactivate sending SMS alarms (3)

Activate sending SMS alarms (3)

Activate time update (3)

Deactivate time update (3)

(1) A setting circuit cannot be activated or deactivated if we do not change the functioning mode of the unit from automatic to remote control by the SMS programming message «pswd* ☐ TMD=TELE?».

(2) A maximum of 4 settings (set) can be programmed between a rank of dates or a specific day (if we omit «>d4/m4/a4») in the SMS message to programme setting circuit. Settings will be executed in the same order as they are written in the SMS message. Programming by SMS has priority over Automatic Programming.

A setting circuit will not be able to be programmed by SMS if it has not previously been programmed by keyboard or through the TELEASTRO.NET System.

(3) Only if the unit is connected to the TELEASTRO.NET System.

In the SMS programming messages capital letters and signs =, :, *, / and ? signify fixed characters, and small letters variable characters, whose meaning we will explain.

pswd: Password required for SMS messages (4 alphanumerical digits).

The Password by default = 1111

□:	Empty space that we must obligatorily insert in SMS consultation and programming messages.
xx:	Latitude degrees (2 digits).
yy:	Latitude minutes (2 digits).
k:	N (North) or S (South).
rrr:	Longitude degrees (3 digits).
ss:	Longitude minutes (2 digits).
u:	E (East) or W (West).
hh:	GMT hour (2 digits).
mm:	GMT minutes (2 digits).
d1 m1 a1:	Day, month and year of the first time change (6 digits).
d2 m2 a2:	Day, month and year of the second time change (6 digits).
d3 m3 a3:	Start date day, month and year to be programmed (6 digits).
d4 m4 a4:	Finish date day, month and year to be programmed (6 digits).
n:	Number of setting circuit (1 to 4).
pp:	ON if wanting to activate or OFF if wanting to deactivate a setting circuit.
man:	Type of setting hhHmm (Time), SR±mm (Sunrise) o SS±mm (Sunset).
z:	Number of user receiving alarm SMS(1 to 2).
eeeeeeee:	Telephone number receiving SMS alarms, to be programmed (9 digits).

EXAMPLES SMS PROGRAMMING MESSAGES:

1111*□CG=42:22N□002:10E□GMT+01:00? (Geographical co-ordinates)
 1111*□PCR1=ON=18H00,28/10/04? (Programme setting circuit C1)
 1111*□PCR3=ON=01H00,OFF=SR+10,25/10/04? (Programme setting circuit C3)

- In this last example, setting circuit C3 will light up at 01:00 hours and will turn off 10 minutes later in relation to Sunrise on 25/10/04.

GENERAL NOTES

- All messages can return a "password error" if a wrong user password is entered in the SMS consultation and programming message or an error of "incorrect SMS message" which indicates the message that has been sent and the text that is wrong.

Example:

COD_EQ: IPT = Incorrect SMS message , hh:mm dd/mm/aa ST

Example:

COD_EQ: Password Error , hh:mm dd/mm/aa ST

- Consultation and Programming messages can be written both in capital and small letters.
- Certain messages may return some type of error telling you to contact the Technical Assistance Service (TAS) of AFEI Sistemas y Automatización, S.A.

Example:

COD_EQ: CH = Error 27 contact SAT, hh:mm dd/mm/aa ST

- For more information on SMS messaging for consulting and programming the TELEASTRO, consult the website: www.teleastro.net.

PASSWORD

The password to access menus ensures protection of the unit against misuse on the part of any unauthorised persons. This will be needed if the keyboard lock in the unit is activated (see submenu «**Lock Keyboard**» in the «**SETUP Menu**» chapter) to be able to access the menus of the unit by keyboard. (See «**Entering Acces Password**» for entering the password).



If unit keyboard lock is deactivated or the password is «0000», you will be able to access the unit menus without requiring it.

If the unit keyboard is blocked, the access password to the menus will have to be configured, which will always be required when pressing the «**OK**» key in the «**Wait mode**» screen. (See «**Configuration and entering access password**» to configure the password).

The access password by default is «0000».

ENTERING ACCES PASSWORD

Steps to be taken:

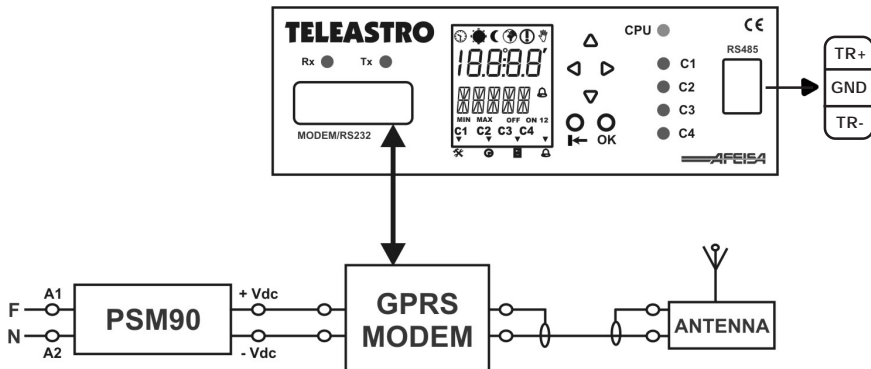
- 1.- With key ◀ or ▶ select the digit, which will flash on screen.
- 2.- With keys ▲ or ▼ respectively increase or decrease the digit that is flashing.
- 3.- Confirm with the «**OK**» key or press key ⬅ to cancel.

NOTE

- If you enter the wrong password, «no VALID» will be displayed on the screen of the unit for a moment and then the unit will return to the «**Wait mode**» screen.

WIRING SYSTEMS

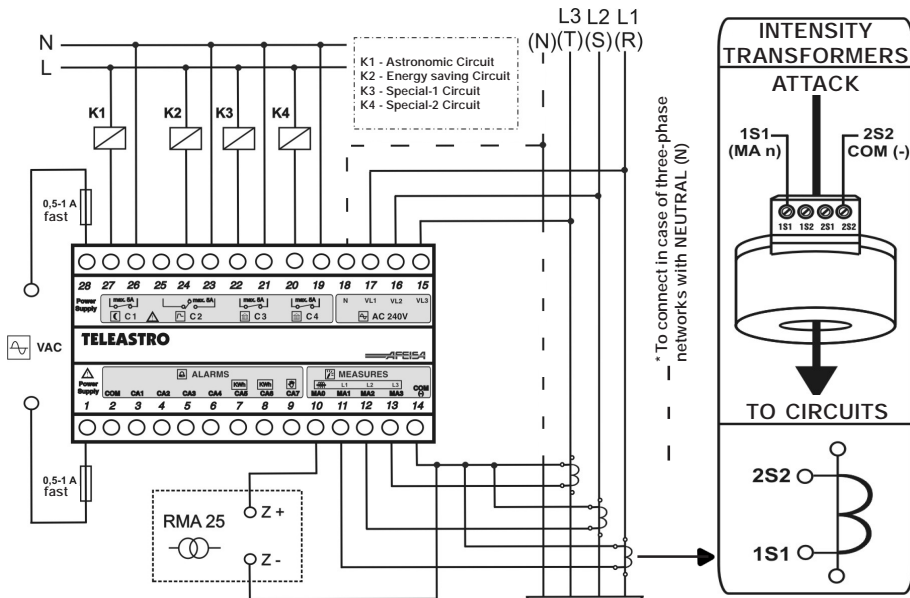
GPRS MODEM WIRING



Aspects to be borne in mind:

- Given that the GPRS modem is a radiofrequency technology (RF), interferences may exist in the presence of other electronic devices, so it is recommended not to install the GPRS modem too close to such devices.
- Installation of the SIM card (if it is necessary) should be done with the GPRS modem turned off. To do so, the button located at the side of the SIM card reader must be pressed in order to extract the sliding drawer and thus be able to insert the SIM card in it (make sure you put the SIM card in properly).

CWIRING SETTING CIRCUITS AND INTENSITY TRANSFORMERS



* To connect in case of three-phase networks with NEUTRAL (N)

Technical characteristics transformers

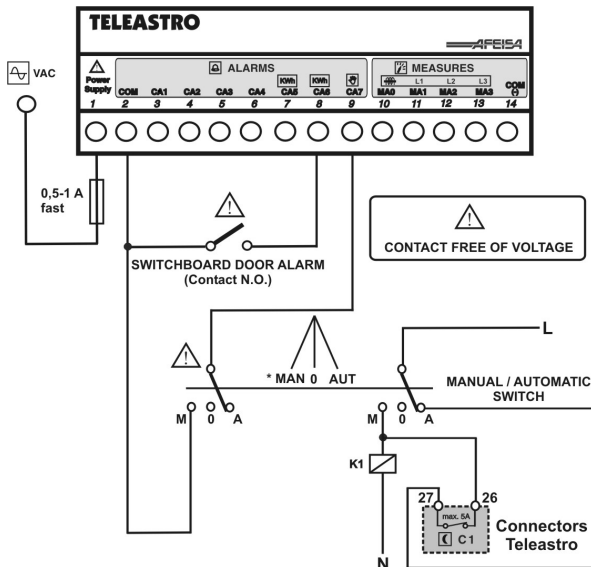
* Section cable: Non superior to 0,75 mm

* Screwdriver: Plane of 2,5 mm

* Pair tightens maximum: 0,6 Nm

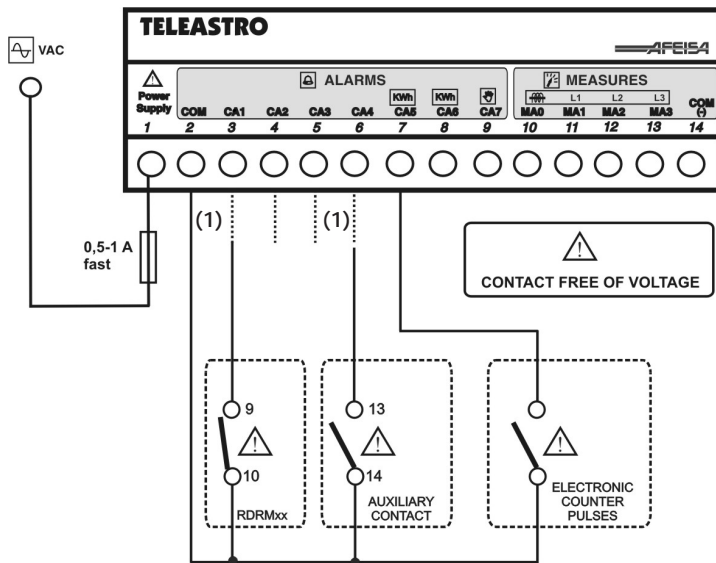
WARNING: Connector 18 (NEUTRAL) and connector 14 (COM-) are internally connected in the unit. They may be at dangerous potentials for the user. You must NEVER connect a referenced unit to earth between any analogical input MAX and COM (-).

WIRING SWITCHBOARD DOOR ALARM AND MANUAL/AUTOMATIC SWITCH



* If functioning mode **Manual "MAN"** is selected with the MANUAL / AUTOMATIC switch, the unit deactivates all the setting circuits that are activated at that moment and Automatic programming is blocked, leaving the operator in total control of the switchboard

DIGITAL ALARM INPUT WIRING



(1) The differential contact RDRMxx as well as the auxiliary contact of the contactor can be connected equally at the digital alarm input CA1, CA2, CA3 or CA4 (According to the wiring that is displayed).

NOTE: For further diagrams and wiring systems please consult the website: www.teleastro.net

DIAGNOSIS OF ERRORS AND FAILURES

The unit doesn't light up the display.

- Revise power supply.

The unit doesn't measure intensity.

- Check intensity transformer leads.
- Revise set up of the unit (see submenu «Intensity transformers» in the «SETUP Menu»).

The unit doesn't measure voltage or doesn't measure the analogical input.

- Check external wiring (see «Wiring systems» chapter).

I can't remote control a setting circuit.

- The functioning status of the unit is on automatic and should be on remote control (see submenu «Unit Status» in the «TEST Menu» chapter).
- The setting circuit to be remote controller is still in hysteresis time.

I can't access the menus of the unit.

- The unit keyboard is locked (see «Password» chapter).

«Error password» is received by SMS.

- Check that the password that is being entered in the SMS message is the correct one.

«Incorrect SMS Message» is received by SMS.

- Check that the format of the SMS message is correct.

The unit doesn't have connection to the TELEASTRO.NET System.

- Check RS lead between GPRS modem and unit and located of the aerial.
- Test the modem (see submenu «MODEM TEST» in the «TEST Menu»).
- Check that the SIM card is properly inserted in the unit and activated.
- Check the unit set-up (see submenu «TELEASTRO.NET System» in the «SETUP Menu»).

It doesn't carry out automatic programming.

- Functioning status of the unit is on remote control or manual or there is SMS programming.

ACCESSORIES FOR THE TELEASTROS

MODEM GPRS Modem GPRS for DIN rail, with aerial and supply. Does not include SIM card.

SET TRAFO-20/100 100A intensity 3 transformers.

RMA 25/1 Measurer of leakage currents from 0 to 1 Amp.

RDRM35 Automatic reconnection differential from 0.03A to 0.3A, diameter 35mm, 6 reconnections.

RDRM35/1 Automatic reconnection differential from 0.03A to 1A, diameter 35mm, 31 reconnections.

SAFETY INSTRUCTIONS

This unit is designed in compliance with CE marking and fulfils the following standards:

- UNE-EN 61000-6-4 (UNE-EN 55011); UNE-EN 61000-6-2 (UNE-EN 61000-4-3, UNE-EN 61000-4-11, UNE-EN 61000-4-4, UNE-EN 61000-4-2 and UNE-EN 61000-4-5); UNE-EN 61010-1.

Proper, safe functioning of the product implies transport, storage, installation and assembly in compliance with the standards that are described in the User's Manual.

The unit does not have protection fuses in its power socket, and therefore it is recommended that protection elements be anticipated.

Precautions should be taken to increase safety, such as:

- The functions that are not relevant for the safety of the installation are governed electronically.
- The functions which by breaking down could cause severe material and even personal damage are carried out using conventional control elements (electro-mechanical).

These considerations are applicable to all electronic control equipment.



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